The PECAN BUSINESS

FROM PLANTING
THE NUTS

TO GATHERING
THE NUTS

B. W. STONE

THOMASVILLE, GA.

INDEX

Planting the Nuts

"IN A NUTSHELL"

AFTER over 20 years' experience in the Pecan business, we write this booklet just as it has been developed in the field, not detailing all of the plans and practices, but giving records of the latest and best improved plans in developing a pecan grove correctly and economically. We find the execution of a grove is more important than knowing how.

Twenty years ago we did not know we could develop a pecan grove with trees 12 inches in diameter at the end of eight years, but we know now it can be done, and know how to do it. That is one object of this booklet. You will find herein statements of plain facts in plain practical language for practical people. The facts of the pecan business are good enough, there is no need of the booster's exaggerated statements.

Tell your friends to send for a copy of "The Pecan Business", or send their names and we will send one direct.

REFERENCES

Citizens Banking and Trust Company

First National Bank — Bank of Thomasville

Peoples Savings Bank, all of Thomasville, Ga.

And Our Customers Everywhere

The latch-string hangs on the outside of the gate for visitors.

Stockton, Ala.

Mr. B. W. Stone, Thomasville, Ga.

Dear Sir:—"The Pecan Business" dropped into my hands last night and I've read every line of it. I most heartily congratulate you on your production. As far as it goes, it is the most practical and reliable guide I know of; and I've hunted for and studied all the pecan literature I could get my hands on for 18 years. Every page shows a close, careful, practical and impartial observer who has labored for years to acquire facts and truths bearing on pecan horticulture to date.

R. M. HODGSON, M. D.

Lakeland, Fla., Sept. 2, 1915.

Mr. B. W. Stone, Thomasville, Ga.

My Dear Sir:— I am very glad to inform you that the pecan trees I bought from you nine years ago have done very well indeed, and I now have a grove of 30 acres in Columbia County, Fla., that can not be purchased for any man's $30,000.

Will be glad to have any literature you can send me on the pecans.

Wishing you continued success, I am,

Yours very truly,

C. C. WILSON, M. D.


UNITED LITHO
& PRINTING
COMPANIES

The Grove that Produced $90 per Acre the Ninth Year

Guarantee

We guarantee trees to be healthy and true to name to customers who buy direct from us; to be grown, dug, packed and delivered to common carriers in first class order. Not liable for damages to exceed the original cost.

We make no charge for packing or drayage or boxes.

Terms—Cash with order. "Owe no man anything", that we may remain friends.

Articles of merit honestly handled and guaranteed. Don't beg a market.

C. O. D.—Parties who prefer to pay on delivery of goods can avail themselves of that privilege by sending one-half cash with order and paying the balance collect on delivery, the charges for collecting and returning money to be paid by the purchaser.

Remittances—By P. O. Money Order, Express or Express Money Order, or New York Exchange. No private checks accepted.

Shipping Season—From November 15th to March 15th.

Club Orders—Many responsible persons get up club orders in their own community and send in to secure club rates. Such trade is especially solicited. Club rates will be given on application.

Substitution—We make no substitutions. We let other nurseries do that. We write, as well as we know, a true and honest account of each variety of fruit, and each planter is able to make his own selection. We burn what is not called for.

Our Catalogue gives accounts of varieties of fruits honestly, truly and without exaggerated statements and misrepresentations—just facts in every day clothes. We believe that a legitimate and good business can be conducted by giving facts only. We know a much larger business could be easily carried on by giving all of the good points and none of the bad. Reader, we give both sides that you may be better able to judge.

Take labels off of trees and make record of orchard. Then you will be able to order exactly the varieties adapted to your place. Labels often cut the tree in two and cause it to die.

Send 10c for sample of nuts.

Pecans on Half Shell

THE PECAN

THE PECAN is an American species of nut bearing trees, and is called Hicoria pecan. It is found in certain parts of the United States and Mexico. To-day it is the most important of all the nut bearing trees grown in the United States. Until 1890 practically all the pecans that were offered in the markets were of the wild varieties. Indians gathered nuts from large pecan trees before our Southern States were settled. The length of time thought necessary to grow a pecan tree to bearing age was considered too long for the hard pressed citizens to undertake, thinking that, at least, over one generation was necessary to grow the tree. This feature of the industry, by improved methods, has been reduced till practical men are now undertaking to develop pecan groves in the most favorable sections of the United States, and expect to gather nuts from them a few years later.

All of the present large improved paper shell pecans are the result of selection of seedlings; and the promising varieties to-day, of over 100, would not exceed twelve. Each section has its special varieties of about five in number.

There has been some effort to hybridize the pecans, and the possibility of this work is beyond the hopes of the most sanguine workers. We first had the seedling apples, and the seedling pears, and the seedling plums, and the seedling peach. We do not use seedlings of any of those fruits now. The future will possibly show equally as great improvement in the development of pecans.

This line of study invites careful, thorough, and, I might say, young scientific students of horticulture.

The following pages of this booklet will adhere strictly to the nut industry of the United States, presenting such facts as I have gained from over twenty years' study.

The requirements of a successful pecan grove are:

1. Selection of section and soil.
2. Supply of moisture.
3. Proper drainage.
4. Plant food.
5. Humus.
6. Healthfulness of tree.

The sections of the United States which can supply the above requirements to the best advantage are the sections which will grow pecans most profitably.

Best Location

The portion of the United States from Maryland to Missouri for the northern border, and from Missouri to Texas for the western border, the Gulf of Mexico for the southern border, and from Maryland to Florida for the eastern border, includes the section where pecan trees grow.

There are splendid seedling pecans adapted to Tennessee and all territories further north, but the present improved paper shell varieties are best grown south of Chattanooga, Tenn., and as far north as those portions of North Carolina which are of the same temperature.

From Bulletin 251 of the United States Department of Agriculture, the most intense sections for the growing of improved pecans are Southwest Georgia, Southern Alabama and Northern Florida. The reason for this is that these sections fulfill more of the requirements of the pecan than any other sections in the United States.

At the meeting of the National Nut Growers' Association at Houston, Texas, in 1913, Professor W. N. Hutt, chairman of the Committee of the Pecan Acreage, reported that when it came to seedling pecans, Texas produced over half of the crop of the United States, but when it came to tabulating his report of the improved pecan, the following table shows where the budded and grafted trees are being planted:

	Budded or Grafted Trees.	Acreage.
Georgia	240,320	14,000
Florida	163,935	10,371
Alabama	38,112	1,856
Mississippi	35,256	2,135
Louisiana	22,805	3,368
North Carolina	11,151	557
South Carolina	10,871	558
Texas	6,814	341
Total	529,264	33,186

When we take men like Prof. John Craig, who held the position of Professor of Horticulture of Cornell University, which is the highest chair of Horticulture in the United States, and when we take into consideration that he, more than once, visited the Orient to study horticulture and the possibilities there, and when we further consider that he was in position to carefully consider the possibilities of the apple of all the favorable sections in the United States, and the possibilities of the peach in the many favorable peach sections in the United States, and the possibilities of the California and Florida oranges; and, as we say, when we take into consideration this man's opportunity for knowledge and the fact that he, after visiting all pecan sections, decided to plant several hundred acres in the territory mentioned, it is one of the strongest proofs which we have that this section is eminently adapted to pecan growing.

Really the cotton belt is, practically speaking, the pecan belt, and from a horticultuial standpoint lies between the orange belt and peach belt. In sections where oak and hickory grow readily are good places to plant pecans. In the absence of hickory, plant after large trees of any kind, if not on land too poorly drained.

The Mississippi delta and the river bottoms of south Texas, so far as richness is concerned, are very desirable sections for the planting of pecans. Pecan trees are not often damaged by overflows after they are two years old, but are usually benefited.

Best Soils for Pecans

Pecan trees require three things: Moisture, drainage, plant food in a proper climate. Only soils which supply these three requirements are best for pecans.

Those soils which are underlaid with a red clay subsoil are best. Soils of this nature are never soggy, being well drained and, at the same time, retentive of moisture and are susceptible of improvements.

Soils naturally endowed with qualities for best developments of regular farm crops, like cotton, corn, oats and potatoes are the soils that will produce best pecan groves. Sour damp soils will never produce a satisfactory pecan tree.

A soil that naturally grows large trees is always a strong one. Such soils have uniform subsoils, and are void of irregularities of pipe clay, muck pockets, etc.

Remember that a pecan tree is a perennial, deep rooted tree, and should be grown on soils in which the roots of this tree can be provided for favorably.

Regular deep sandy lands have not been growing satisfactory trees and nuts. Sections of the country where the wells are from 15 to 30 feet deep grow better pecan trees than where the wells are from 75 to 100 feet deep.

Preparation

A thoroughly prepared cotton or cornfield is a most excellent place for the planting of pecan trees. Subsoiling the land for a few years previous is quite beneficial, deepens the soil and helps the supply of moisture. The only way in which an improvement could be made would be to grow one or two crops of leguminous plants and turn them under for the benefit of the soil. Should there be any wet or seepy sections in the grove, these should have open ditches or tile drains, sometimes both, for best results. The tile drains could be run between the pecan tree rows.

If the soil is new ground, it is best to remove the stumps and plant some crop like peas or corn and peas for one year before planting the trees. We have dug holes for trees in new ground and hauled good field soil to fill in when planting the trees with good results. Remove all sticks and chips from near the tree to prevent wood lice from damaging the young trees.

Distance to Plant

On all good pecan soils the trees should be planted at least 60 feet apart. On Mississippi delta land and other very rich land the trees should be planted at least 70 feet apart. On some close fine grain soils that make short limbs and intensive growth, about 50 feet possibly would be the best distance.

About four trees are enough on good land after trees are 25 years old.

20	trees	to	the	acre	places	them	46	ft.	8 in. apart,
17	"	"	"	"	"	"	50	"	"
12	"	"	"	"	"	"	60	"	"
10	"	"	"	"	"	"	66	"	"
9	"	"	"	"	"	"	70	"	"

Some pecan growers prefer to plant 20 trees to the acre, cutting out one-half of them when they begin to crowd. It is figured that the removed trees, at the end of their usefulness, will have compensated the owner of the grove equal to the expense of the grove to date. This is a common practice with the northern apple growers who, in planting a standard apple orchard, interspace it with quick-bearing, short-lived trees. With them it is no experiment, but instead, when properly managed, results profitably.

For our part, we prefer 12 trees to the acre, and use the space between the trees for general farm crops for remuneration. Of course, scarcity and price of land have their influence upon which plan a person decides to use. It takes nerve to cut down a crowded pecan tree; besides the tree cut down has exhausted the soil more or less, and will curtail the crops of the remaining trees.

Digging the Holes

We like holes dug 30 inches deep and 30 inches wide, throwing the top soil on one side and subsoil on the other side. If planted early in the season a large hole is better. In planting in the spring at the end of the season a small hole for the tree is surer. In planting a tree in the smaller hole the roots can touch the walls more quickly and get the benefit of the rising moisture by capillary action. A very large hole in the spring time, during a dry spell, is much harder to keep moisture in than a small hole.

Dynamiting for Trees. We plant trees both with and without dynamite. We have produced trees at the end of six years 8 inches in diameter with dynamite, and we have produced trees at the end of six years 8 inches in diameter without the use of dynamite. The advantages of using the dynamite are: to loosen up very hard soils and those with hardpans, and to facilitate the work where a large quantity of trees are to be planted. Grove trees, where they have become very closely packed, or where the soil has been too wet at times, are often benefited by the use of two or four charges of dynamite within about eight feet of the tree.

The only disadvantage in using dynamite is where the soil is too damp. It then has a tendency to form a large pot; also it makes loose soil too loose.

Planting the Tree

Trees should be conveyed to the field for planting without allowing the roots to become dry at all from exposure to wind or sun. We prefer planting by taking boxes of trees as received from the nurseryman, removing the top, putting the boxes on a wagon, and take out one tree at a time fresh from the moss and plant it with the original moisture on it. The trees can also be unpacked and put in a barrel of water and carried to the field. When ready to plant take a knife, shears or saw and cut off afresh the tap root. This removes any broken parts or the possible chances of wood lice getting a start. Cut off the broken roots by making the slope on the under side.

In the well prepared holes stand a tree in the hole to see that if when planted it will be the same depth that it was when it grew in the nursery. This is done by digging the hole a little deeper or filling it up some, or trimming the tree. Use only good top soil in filling in the hole around the tree. Put in little shovelfuls and straighten out each side root as you come to it, packing the soil as nicely as you can without bruising

the roots. A rammer made out of a hoe handle with cloth tied on end is an excellent tool. When two-thirds planted, two buckets of water applied around the tree will prove of good advantage. It is best to allow a half-hour's time for the water to soak around the roots, and then finish filling up the hole with dirt and pack it. Always leave loose soil on top. Be sure not to let the collar of the tree be exposed for any part of an inch. If left exposed the tree will not grow. While the dirt is being filled in around the tree, it is well to sift in about two pounds of fertilizer from the bottom to the top, so that when the rain comes it will dissolve the fertilizer and permeate the whole soil. (*See Heading*—Fertilizers.)

One January we planted 200 trees by loosely throwing in the dirt and not packing at all. Fortunately a heavy rain occurred in a few days and settled the dirt more carefully and accurately around the roots than we could have done by foot or hand. It was necessary to send a hand over the field and refill most of the holes and only two trees had to be replanted.

In a dry time, to plant a pecan tree and not pack the soil, would be risky, for the tree would be giving up its moisture to the soil and would be damaged. We have planted pecan trees and used a whole barrel of water to the tree, making a regular puddle, and failed to get best results. The reason was that the tree demands some air as well as soil and moisture. The roots in this case were smothered. It is not a bad plan to plant a pecan tree as carefully and as thoroughly as you do a tomato plant.

The later in the season a pecan tree is planted, the more care is necessary to pack the dirt around the roots. If you will fill in around a pecan tree till you have just gotten above a cluster of roots, and leave the hole in basin shape to receive two buckets of water, this water will place the dirt more carefully and closely around the roots than it is possible to do in any other way.

December is the best month in which to plant the tree. January and February are the next best, and March is often as good, provided a severe dry spell does not follow.

Hillside Groves

On all reasonably level land, it is more satisfactory to lay off rows straight, but on hillsides, where terraces are needed, do not try to have the rows straight. Lay off rows about 30 feet from the terrace and with the terrace. Trees grown this way will be more easily cultivated and will yield more nuts.

Mulching and Staking

When a pecan tree has just been planted, the best thing that can be done for it is to give it a good mulch consisting of coarse litter. An armful of cane pomace or pine straw makes a good mulch. Four pounds of oat straw or other coarse material also makes a good mulch. A little retention of moisture in a severe drought often means the life of a tree saved. Visit one tree during a dry spell with a mulch around it. Investigate the moist condition of the soil unpacked just beneath the mulch, and be converted to mulching.

Two good stakes about 6 feet long, about 2 feet in the ground and about 16 inches from the tree on either side is the next best investment that you can make for a pecan tree. If the lower end of the stake has been dipped in coal tar it will last longer and ward off wood lice.

In planting trees around the house, a four-inch sewer pipe placed 16 inches deep and 12 inches from the tree, so that a couple of buckets of water can be poured in them once a week in a dry time, often means the life of the tree and the gaining of one year's growth. Stuff a sack in the mouth of the pipe. In the absence of a sewer pipe use an old stove pipe or a wooden box.

Fertilizers

In the study of fertilizing pecan trees we desire simply to comply with the demands of the tree, both in reference to the ingredients and the moisture supply. The demands of the tree are nitrogen, phosphoric acid, and potash principally. Some lime, vegetable matter, and moisture are also required.

In planting a tree use one pound of bone meal and one pound of sheep manure sifted in from bottom to top. This is sufficient fertilizer for the first year. About February of the second year, apply 4 pounds of a guano analyzing 8 per cent. acid, 4 per cent. ammonia and 4 per cent. potash. This is best applied in a barred furrow 6 or 8 inches deep on either side of the tree for a space of 3 to 4 feet. Immediately cover with turn plow. The third year use 6 pounds, the fourth year use 8 pounds, and apply as previously described, except lengthen the space of application. The fifth year use 10 pounds. This should be applied under the branches of the tree and immediately plowed in.

In applying fertilizers to a tree five years old or older, walk around the tree just under the edge of the outer limbs, strewing the fertilizer to the right and left, letting the larger per cent. be applied to the outer side, as more roots of the tree are there than on the inner side.

The future fertilizer for the grove should be applied broadcast, either under regular crops or peas, for the benefit of the trees.

As the trees begin to bear, use less nitrogen and more potash.

As to the forms of fertilizers, would say that cotton seed meal, stable manure, tankage and leguminous crops are the best forms of nitrogen. Bone meal and acid phosphate are the best forms of phosphoric acid. Sulphate of potash, muriate of potash and Kainit are the best forms of potash. We do not recommend nitrate of soda or sulphate of ammonia at any time.

In applying lime from 1000 to 2000 pounds to the acre should be used. We consider the fall of the year the best time to apply it, and the application should be broadcast and harrowed in.

In France heavy applications of lime are made in the walnut groves. Also in the United States walnuts respond to lime. In no case do we know that lime has been detrimental to pecans unless it makes the shell slightly thicker. Chestnuts are damaged by applications of lime.

Pecans are making some growth and the roots are active most all of the growing season, so there should be plenty of plant food available for the trees all the time, but the principal growth is made in the spring.

As most all commercial fertilizers are now made quickly available, it is best to apply these fertilizers just before the special growing seasons. We would say put on the first application about February 1st, and the second application about June 1st.

We are conducting fertilizer experiments on pecans, using different forms, proportions and amounts, and will be able to give additional information on this subject in the future. That is one of the interesting features of the pecan industry. The fact is that none of us know positively the best fertilizers under all conditions.

Cultivation

The best cultivation for pecan trees is a subject that is very interesting to all pecan growers. In the cultivation of a pecan tree let us consider what the tree demands. The tree demands the soil be broken about 4 or 5 inches in the winter time, when the tree is dormant, any time after the leaves shed and before the buds swell in the spring. In order that a full supply of moisture may be stored in the soil, this breaking should be done early enough to allow the winter's rains to soak into the soil instead of running off. The other cultivation during the growing period of the tree is simply to prevent weeds and grass from growing, and to conserve the moisture in the soil. This cultivation through the growing period should be more shallow than the breaking, and should cease about the first of August, when a pea crop should be sown.

The tree demands that these cultivations should be regular each year. The land should be broken about the same depth each year, thus preventing interference with the root system of the tree. The cultivation should be regular and shallow so as not to cause the tree to shed its young fruit. It also demands that a splendid field for root growth be maintained during the growing season. The most satisfactorily cultivated trees are those where regular crops are grown. It is disastrous to break the land shallow one winter and deep the next. It is also disastrous to plow the land too deep during the growing season, or failing to keep the land plowed.

Large cotton stalks or other deep rooted plants in a bearing pecan grove can easily be managed by first running a stalk cutter, and then running a two-horse plow diagonally across the rows.

Orchard Management

Under the subject of Orchard Management we propose to treat it only from the field point as to what crops to cultivate in the orchard. In other words, how to manage so as to develop a pecan tree or a pecan grove. We have already told how to plant, mulch, stake and water pecan trees, and this applies to trees around the house as well as to larger groves.

For a small grove the best management is to use the grove as an intensive truck patch. A highly fertilized, low-growing crop is an ideal condition for pecan development, for this complies with the requirements of the tree—early breaking of the land, thorough cultivation, plenty of plant food, and desirable moisture supply conditions. Those who have developed larger groves have come the nearest to complying with these requirements, thus fulfilling the demands of the tree.

On a larger scale, cotton or any low-growing crop like Irish potatoes, pinders and peas are the best crops to be grown. Sweet potatoes keep soil moist too late and sometimes cause winter-killing. Cotton should never be grown more than two years in succession in a pecan grove, for the reason that it robs the soil of too much humus. After growing two crops of cotton, by all means use a crop which will permit of peas or velvet beans being planted.

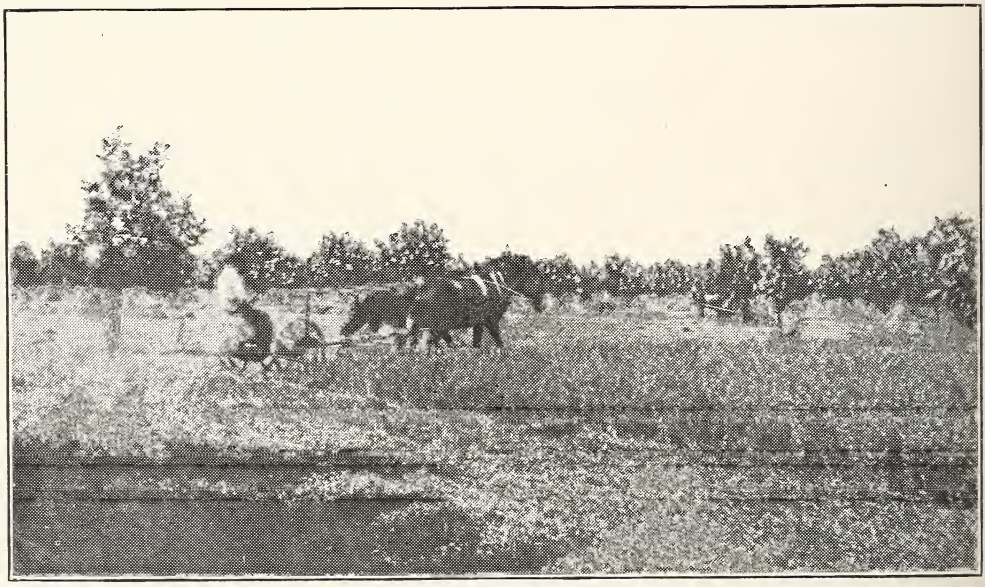
A corn crop in a young pecan grove is detrimental, from the fact that the shade and lack of air circulation prevents the growth of the trees. If corn is to be planted, leave a space for three rows of pinders to be planted at the tree row. In a cornfield if the rows run east and west more sunshine will be allowed to the tree than if the rows run north and south.

The management of a large pecan grove is best accomplished by leaving a strip along the tree rows and grow no crop at all, just cultivating it to keep it perfectly clean and to conserve moisture till near the first of August, and then plant to peas.

After the land is broken in the winter a double-action harrow is one of the finest tools made to use on this strip. If the strip is in fine cultural condition, an Acme harrow can be advantageously used. For such work in the near future we expect there will be a large disc harrow arranged with a force feed fertilizer attachment, which will be used in putting out the fertilizer around the trees. This tool will cultivate the land, open the furrow for fertilizer and cover it up, all by one man and one team.

Under this subject of "Orchard Management" a system can be established for large groves by just growing two crops in the groves—oats in the winter and peas in the summer. This can only be done by those who will use a heavy application of fertilizer, both under the oats and under the peas, taking care not to plant oats near the trees. These two crops, properly managed, will be remunerative, and have the advantage of requiring a small amount of labor, and can be handled mostly by machinery. These two crops, on average soil, should not receive less than 1000 pounds of guano to the acre in the course of a year's time for most economical results.

In the planting of oats in a pecan grove it is quite an advantage to cut the oats for hay instead of allowing them to mature. By making oat hay there is less moisture



Pecans and Alfalfa.

and less plant food required than for oats. Then again, it allows the land to be plowed earlier for peas, often an important point in conservation of moisture. Fulghum oats are best.

A finer grove can be developed from freshly set trees than from a grove three to four years set, if abused by the negro and the mule or otherwise stunted.

Pecans and Alfalfa

I wanted to know if alfalfa and pecans would made a good combination, so planted 13 acres of a five-year grove solid to alfalfa Oct. 10, 1914. The alfalfa did nicely and the best acre yielded 5400 pounds, and sold for $54.00 baled.

Some conclusions:

These two crops are too important to be crowded on the same acre. If there were plenty of moisture throughout the whole season, it would be an ideal combination. When a severe dry spell comes, as it did this year, there is not sufficient moisture for either, much less both. The alfalfa was a lighter crop by being planted in a pecan grove, and the pecan trees made less growth and produced smaller nuts than where planted with any other crop.

It would not do to plant a pecan grove in a well set alfalfa field, for the first dry spell would get the trees. Neither would it do to plant alfalfa in a pecan grove of large trees, for the trees would smother out the alfalfa.

The way to grow the two together is to leave a ten-foot strip for the pecans, giving both intensive cultivation and plenty of fertilizer. Gradually widen the strip for trees till the alfalfa yields to the demands of the bearing trees.

Growing a Pecan Tree

On flat beds, prepared as if for cotton, 5 feet wide and previously fertilized with about 500 pounds of guano in the drill, we make a trench and plant blocky seedling nuts, running about 100 to the pound, 5 to 6 inches apart. This planting is done in December or January. We cover the nuts 2 inches deep and await their sprouting. Just before they come up we board them off, which helps to keep down the weeds and grass. With rake and small hoes we clear the drill and with cultivators we plow the middles.

About the middle of August we plant a row of peas between the rows of trees in order to keep vegetable matter incorporated in the soil. We grow the peas also between the trees that are large enough to dig, for we find that the peas do the most good after the trees have quit growing, and the peas help to ripen up the trees.

Eighteen months after the nuts are planted the seedlings should be from 2 to 3 feet high and are ready to bud. We consider the month of July the best month for budding nursery trees. We generally commence the last of June and continue through August. This is the time of the year that the sap is flowing freely and will allow the bark to slip.

Budding the Pecan. We use a double-bladed knife by taking two single rigid knives which we get of Mayer & Grosh, Toledo, Ohio. We rivet them to a piece of poplar, so as to make the blades parallel and one inch apart. We can furnish these double-bladed knives for $1.00 each postpaid.

Use well developed buds for the trees from which you wish to bud: preferably cutting the buds in the morning for the whole day's work, immediately cutting off the leaf stems and wrapping the bud sticks in a damp cloth.

Budding the Tree. On a smooth place on the tree with knife remove a cuff by cutting just through the bark, split on back and remove cuff. Then cut a cuff with bud on it off of the bud stick, remove carefully without splitting and insert on tree where space is made for it. Take a strip of waxed cloth one-half inch wide and about 14 inches long and wrap the bud securely, like a surgeon. Commence below the bud and get one round so it will be lapped and secure before you get up to the loose bud. Carefully hold the bud in place and wrap spirally, leaving nothing out but the bud, and you need not leave it out. In three to four weeks the strings should be taken off. Cut top off 4 inches above bud and keep off suckers. You may tie bud to this stub to prevent wind from blowing it off.

Budding Cloth. Take 5½ pounds rosin, 8 pounds beeswax, 1 pound tallow, best quality of each, put in a lard can and heat till it boils. Good bleaching makes best cloth. Tear in strips 14 inches wide and fold close to dip. Dip in and with two thin boards strip off all the wax you can. Unfold while warm. When cool, fold up and keep wrapped in good paper. These are the exact operations practiced by us.

Cost of Groves

The cost of a grove depends upon the location. It can be developed much cheaper on a small scale, where the owner looks after it personally, than where it is managed at a distance.

The first thing to consider is the cost of the land; then comes the preparation, the digging of the holes, planting of the trees, cultivation, fertilizers, re-planting, management, the interest on investment, taxes and overhead charges.

Where one is conveniently located and can grow intensive crops between the trees, the cost of the grove is reduced to the minimum price. But where the grove is developed on a larger scale intensive cultivation is out of the question; the returns for the crop do not enter into the returns from the investment, and the grove is a constant expense till it begins to bear. So the cost of the grove depends upon convenience or inconvenience, and its size, together with the time it takes to develop it.

A grove brought to bearing age in five or six years costs more money than one which has taken eight to ten years to bring it to bearing age.

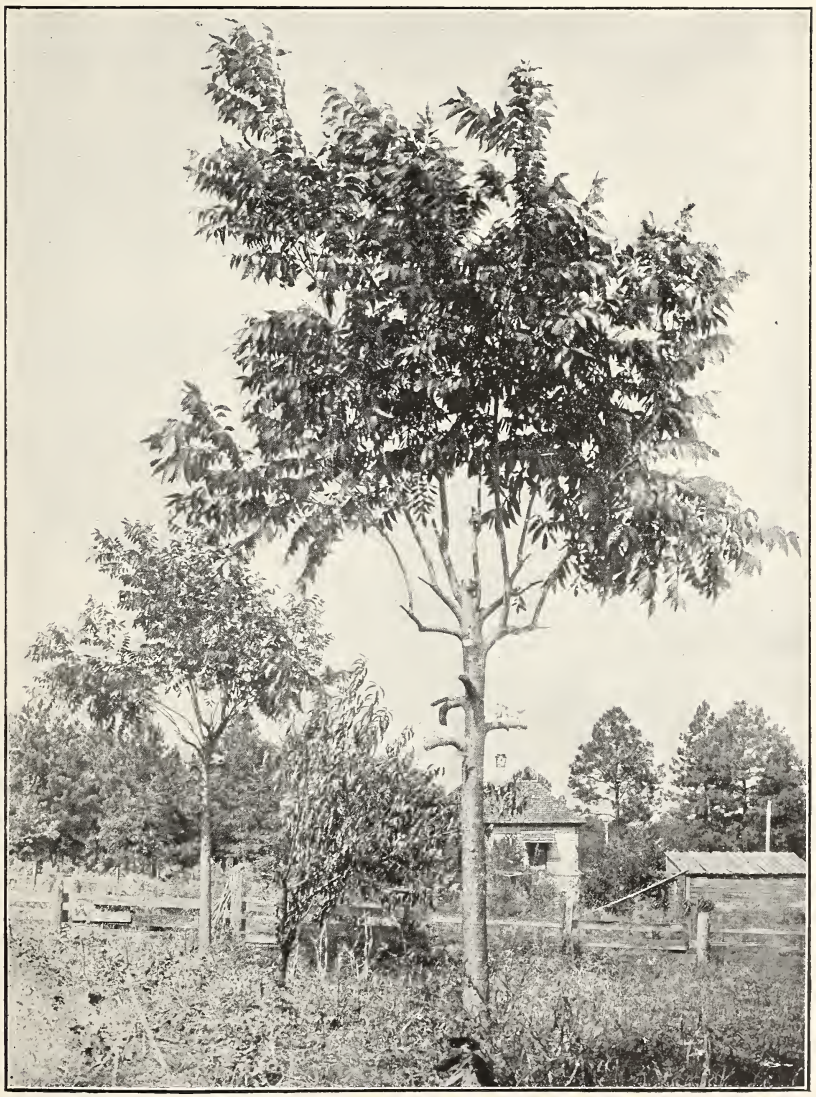
There are bulletins written showing the cost of apple orchards and peach orchards to the bearing age, and the prices range from $200 to $500 per acre. Pecan groves can be produced for similar amounts.

Pruning

Pecan trees require as little pruning as any fruit trees grown. When the tree is first set out, unless it is over 7 feet high, we do not even take off the terminal bud. Were we planting in arid Texas, we would cut them down to 12 or 18 inches high.

When the buds first grow, possibly the best plan is to promptly remove all those not needed, leaving only those at the top to form a head.

It is best to leave every leaf on, and when the buds have grown 2 or 3 inches pinch out the buds of the undesirable branches and leave the leaves on the stem to aid in the assimilation and developing of sap; shading the body of the tree and not leaving the scarred surface by removal.



SEVEN-YEAR-OLD PECAN TREE, top-worked with Stuart scions. Seedling top cut back in February; buds inserted August 10th and the lower branches removed September 1st, following. From U. S. Bulletin: "The Pecan", by C. A. Reed, Bureau Plant Industry.

The first two or three years the only pruning necessary is to pinch out the buds of the limbs which are not in the proper place for tree forming. The next few years the pruning necessary is to remove cross branches which would interfere with the even head formation of the tree. Trees should form their head from 5 to 7 feet from the ground.

In removing a limb we follow the practice of cutting the limb off, not close to the body, but up the limb twice the diameter of the limb. This applies to small as well as larger limbs. The reason of this is that if the limb is removed close to the body it will present an open surface for evaporation often from 20 per cent. to 40 per cent. of the circumference of the tree, but by cutting it off higher up—twice the diameter—and leaving it there for two years before cutting close to the body, it will then present an open surface for a much smaller per cent. of circumference. All freshly cut surfaces should be painted over to prevent the evaporation of sap from the tree and prevent fungous diseases from entering. A good white lead with a little oil and just enough lampblack to make the mixture near the color of the bark is fine. The lampblack has no virtue other than preventing conspicuousness. Deck paint is ready prepared and is good.

A crotch tree is one in which the trunk is equally balanced into two branches. This is a very dangerous form for a tree, owing to the fact that storms often split them and ruin the whole tree. The best remedy for a crotch tree is to cut off about one-third of the branches on one of the limbs. This will allow the other limbs to predominate, and in a short time the tree ceases to be a crotch tree.

How to Top-Work a Large Pecan Tree

This consists of three things: Sawing the top off while the trees are dormant; budding into the sprouts the following summer; and keeping the suckers removed.

In detail, we would say that any time in the winter while the trees are dormant, preferably February, is the time to top them. Trees from 12 inches down are the ones most advantageously worked. On approaching a tree, glance at it and decide where you want it to form its future head by selecting a cluster of branches on the tree. Do not undertake to bud the tree at considerable distance up and down; it is not necessary. After you have selected the cluster for the future head, then saw off the main trunk from 6 to 10 inches above the upper branches, and the other branches from 6 to 20 inches to give it a pyramidal shape. Arrange to leave on the tree from 15 to 20 per cent of the lower limbs to keep up the circulation of the sap, thereby affording vigor and stamina to the tree while the new head is being formed. In sawing off these limbs carefully saw the under side first and then saw the upper side, avoiding, in each case, the limbs splitting downward. When this is cut, paint it at once. If the trees are in a scrawny condition they must be fertilized at once, but if in a thrifty condition, the fertilizer will not be needed. Avoid making the trees too thrifty, for it will cause the sprouts to grow abnormally.

About the first of May, if the trees have sent out too many branches they should be thinned out so they will be about 4 to 8 inches apart. This is necessary in order to have well ripened sprouts to receive the buds later on. The month of July is the best month to bud these new sprouts. While the bark is too tender and the buds are not brown, the trees are not ripe for topping, and, if budded then, will not live or do well.

The budding of the sprouts is exactly the same operation as described for budding the trees in the nursery. When ready to bud, arrange to put from 10 to 20 buds on a tree, that is, from 6 to 10 inches in diameter. Thin out the sprouts to that number. While this is too many, we want to make sure of getting a stand the first summer. When the budder inserts his bud in the new sprout, he should immediately cut the sprout off about 30 inches above bud, leaving five or six fine leaves. The object of cutting this sprout off that height is to protect it in a sudden wind storm.

In four weeks after the buds are inserted, and they are always inserted on the upper side of the limb, the wraps should be carefully removed. As soon as removed, the sprouts should be again cut—this time 3 or 4 inches above the buds.

In another two weeks visit the buds again with knife and strings. Remove all suckers carefully with knife and, with the strings, tie the newly grown buds, which should be from 4 to 10 inches long, to this cut off stub to prevent its being blown off by the wind.

Two or three weeks later visit the trees again, and remove suckers and tie any necessary buds. This completes the work for the first summer.

When the buds begin to grow, keep all suckers (seedling sprouts) removed promptly. When sufficient buds begin to grow to form the new head of the tree, and when these inserted buds are about one foot in length, retard the growth of that lower 20% of sap ripening limbs by cutting them part into and breaking limbs down. They will still stay green, but will not make much growth. If top of tree where buds have been inserted is doing well, these lower limbs should be removed about the middle of July. If buds fail to grow, or enough fail to grow, then leave on that 20% of lower limbs till a fair top has been started. All very rapidly growing buds should have one-half of the tops removed at any time of the year. This makes them stocky and saves them in time of gales.

To Top-Work a Pecan Tree in the Spring by Grafting by Slipbark Method. Saw off tree 1 to 6 inches in diameter when growth begins in the spring so bark will slip. Take dormant scions of variety desired; sharpen them down on one side only, having the cut surface about 3 inches long. On side of tree with least ridge pry open the bark with wedge a short distance and insert prepared scions, shoving down till cut surface is not exposed. Tie securely with wax cloth and cover top of tree with wax.

Pecans on Hickory

Top work with hickory to pecans has been done by many and in some places extensively. Theoretically the plan was all correct, but results prove that it is strictly not desirable for heavy yields. The pecans grow too fast for a few years, and when the top is compelled to partake of the nature of the slower growing stock it curtails its growth and especially its yield. At the end of twelve or fifteen years I believe I can plant a pecan seed and bud it to a pecan and grow a finer tree than can be grown by top working a hickory 6 inches in diameter to start with.

Go slow on top working hickory to pecan except for effect in a small way and for interesting work.

Pecan Diseases

Some people are under the impression that the hardy pecan tree of the forest is free from insects, but the State Entomologist of Georgia makes the statement that forty insects attack the pecan. We are glad that there are so many insects that like the pecan, for even insects like something good.

Of the forty insects which attack pecans, there are only a few serious ones, and the entomologist assures us that with sprays of arsenate of lead we can control the insects satisfactorily. One of the worst insects is the pecan case bearer, which attacks the young buds; another is the web worm, which eats holes in the leaves and devours the blossoms. They can be controlled by the application of arsenate of lead. The web worm, the borer, and the girdler all come in for their share of attention, but none seriously affect the grove if proper attention is given. The girdler is easily controlled by collecting all of the limbs and burning them. These limbs always contain the eggs for the next brood. Web worms or tent caterpillars in this section make three broods each year—May, July and September. The remedy is to carefully collect them before they mature and destroy them by mashing them or burning them after they have been removed from the tree. The pecan borer makes a hole in the trunk of the tree about the size of a lead pencil, and is controlled by applying with a medicine dropper some carbon bisulphide and plugging the hole with clay or putty.

Rosette is, up to date, a pecan trouble which we have not solved, but one to which Uncle Sam is devoting careful and scientific attention, and we hope within a short time to be able to entirely control the bad effects of this diesase. So far it is believed to be caused by physiological disturbances of the soil moisture.

What Fruits to Grow in a Pecan Grove

In most sections where pecan trees are grown, peaches can be grown successfully between the trees. The main point to consider is to be sure not to allow the soil to become exhausted by the peach trees, thus depriving the pecan trees of sufficient nutrition.

In a few sections figs and Japan Persimmons make good by-crops for pecan groves.

In sections where the temperature and other conditions permit, the Satsuma orange appears to be the most profitable fruit to grow with pecans. The belt of country between Lake Charles, La., and Brunswick, Ga., is favorably situated, being shielded from severe temperatures, and is supplied with sufficient moisture to grow to perfection Satsuma oranges.

One would ask, "Has the Satsuma any enemies or drawbacks?" To this we would say that it has its quiver full. The first drawback is the possible visitation of a severe freeze. There has not been a severe freeze in South Georgia since February, 1899, but this is not saying that we will not have one soon, or even a severe freeze in the next three successive seasons. The lowest temperature during the above mentioned freeze was two degrees above zero in Thomasville; at Mobile, Ala., it was one degree below zero, and one degree below zero at Tifton, Ga. Since that date the lowest temperatures at Thomasville and Mobile have been fifteen degrees above zero and at Tifton, Ga., thirteen degrees. So long as the temperature does not get below twelve degrees, the Satsuma orange industry can survive.

After carefully considering the advisability of this section for Satsuma oranges, we planted fifty acres in a young pecan grove near Thomasville, and at the present date they are showing up better than we anticipated. Come to see them.

The Satsuma requires mineral fertilizers strictly, and for young trees a guano which would analyze 7% acid, 5% ammonia and 12% potash is recommended for best results. The ammonia is best obtained from sulphate of ammonia and nitrate of soda. The potash should always be from sulphate of potash. Use less ammonia as the trees begin to bear.

One grower in South Alabama shipped a car load from thirty acres the fourth year. We are looking for a car load from fifty acres the fourth year.

What Fruits Not to Grow Between Pecan Trees

This list includes all extra long-lived trees, such as pears, apples and mulberries.

Age of Bearing and Yield

We have repeatedly had pecan trees which bore the first year, grafted in the nursery. We had one tree which bore sixty-two large nuts the third year, seventy-five the fourth year, and eight hundred the fifth year. We had a Mobile which bore 20½ pounds the fifth year. We gathered 14½ pounds of Money Maker the sixth year, and 5½ pounds of Curtis the sixth year from a tree growing in Bermuda grass and planted to oats each winter. The famous Parker ten-acre grove began bearing a few nuts the fourth and bore 180 pounds the fifth year.

All this is to show that pecans often begin to bear ealy, but all of the pecan growers, seeking practical results, do not want trees to bear till the eighth year. If cultivated for growth till this age they will then make much larger yields than if allowed to be stunted in early bearing.

Actual Pecan Yields

The Moore nut bore 62 pounds the sixth year after planting; the Mobile 20½ pounds the fifth year. The Brooks bore in three years—the seventh, eighth and ninth year, a total of 200 pounds, the tenth year 106 pounds. The Wight Frotscher tree bore 344 pounds in 1913, and a total of 2,140 pounds in the whole 22 years planted.

The Wise grove at Fitzgerald, Ga., ten acres, bore a few nuts the fourth year. The fifth year bore 63 pounds, the ninth year 900 pounds, and the tenth year 1,100 pounds.

R. J. Parks' grove of twenty-five acres, twenty-seven trees to the acre, bore the ninth year, 2,800 pounds.

The Calloway tree at Hardaway, Ga., in 1911 bore 400 pounds, and that was its twenty-fifth year.

The original Claremont pecan tree at Pecania, La., is about forty years old, and has produced as high as 350 pounds of nuts in a single season, which have sold for 40 cents a pound and over. The tree is valued by its owner at $1,000.

Theo. Bechtel has in his back yard at Ocean Springs, Miss., a tree of the Van Deman variety, a kind which is not regarded as a prolific bearer, although its advocates claim that additional age will show increasing crops, a theory which seems to find confirmation in this case. The tree was planted in 1900. The crop of 1910 was 100 pounds. A year later, 1911, it yielded 60 pounds; in 1912, 70 lbs.; in 1913, 185 lbs.; in 1914, 100 lbs.

Mr. I. P. Delmas of Pascagoula, Miss., has one of the best kept orchards we ever saw, and he has, on eighteen acres, 325 trees of Delmas, Stuart, Schley and Success planted in 1903. We saw him gathering 75 barrels of 130 pounds to the barrel in the year 1912, and he sold the nuts for 60c, 40c, and 75c per pound, according to variety. The crop of 1911 was 52 barrels.

The John I. Parker grove here at Thomasville, consisting of ten acres (Frotschers), bore:

4th year.....a few nuts.	5th year..... 180 pounds.
6th year.....210 pounds.	7th year.....1137 pounds.
8th year.....637 pounds.	9th year.....2698 pounds.

and netted that year $90.00 per acre.

10th and 11th years, poor crops.

All these are records of the best yielding trees and groves, but the owners of each will tell you that their experience enables them to do even better if it were repeated.

Gathering, Drying, Polishing and Grading

Gathering. From the middle of September to the first of November is the time for gathering pecan nuts. The greatest per cent. of the crop is gathered between the dates of October 15th and November 15th. Some make three or four gatherings of the crop to prevent discoloration and the loss from intruders, and to prevent those in the flooded districts from being washed away. The most practical time to gather pecans is when 80% of the shells have cracked. Just before gathering remove all obstructions from under the tree, either by mowing it off with a mowing machine, or cutting it off with a hoe. Then, with good fishing poles, thresh down the nuts of high trees. This is accomplished by making a high frame on a wagon which will allow the men to reach the branches of the trees from the frame.

In picking up nuts from the ground, never put your hands on one which still has its shell on it. The reason for this is that they are more or less faulty, and will not pay for the trouble of handling. Gather nuts in suitable baskets like peach baskets, and pour them into sacks for carrying to the pecan storage room. In gathering, be sure never to mix the varieties. Two large sheets, one on each side of the tree, make quite a convenience in gathering nuts. When hulled out, burn the hulls. In this way the shuck worm is destroyed.

Drying. The nuts are dried by placing in sacks of about one bushel each; the sacks being handled several times in being taken out to sun and returned, thus polishing them. Still another way is to place them on screen sieves in the sun. Still another way is to place them on screen shelves in the storage room. They should become thoroughly dry before they are offered for sale, this taking about three weeks' time. Artificial drying is being tried out and promises favorable results.

A damp cellar is never a good place to store pecans because they will become rancid. Any good ventilated building where the moisture can be controlled, makes the best

storage room. To keep them over six or eight months, they will probably have to be put into cold storage, where the temperature should be from thirty-five to forty degrees; and so far as we know will keep indefinitely.

Polishing. Some varieties of nuts, like Frotscher, Pabst, Van Deman, and others reasonably clean, appear best on the market without any extra polishing. Money Makers, Brooks, Schley, Delmas, and other nuts which are too dark when first gathered, are wonderfully improved in appearance by polishing before being offered for sale.

This operation is performed by rubbing them in sacks, and also by machinery made for that purpose, which might be termed a mixing machine or polishing machine. This polishing operation does not improve or detract from the quality of the nut. Quantities of mixed nuts, varying greatly in color, are often stained to give them a uniform appearance for commercial purposes. This is an advantage from the appearance standpoint, but is detrimental from the quality standpoint. The public needs to be educated to the fact that the finest quality of nuts is obtained from those not artificially stained.

Grading. Most likely the proper grading for pecans will require them to be put into three separate grades: No. 1, No. 2 and Culls. Always crack the culls and sell them as meats only.

Grading machines with elongated slots in the cylinders should be used.

The National Pecan Exchange decided to grade as follows: Stuarts, Frotschers, Delmas, Alley and Money Maker 13–16 and up, short diameter, to be classed as No. 1, and 11–16 and 12–16 to constitute No. 2. Varieties Schley, Van Deman and Pabst 12–16 and up to constitute No. 1, and the next two lower sixteenths to be classed as No. 2. Curtis 11–16 and up as No. 1, and 9–16 and 10–16 No. 2. On account of irregular filling habits of Nelson, Columbian, Mobile, Teche and Russell, they were not graded.

Marketing

The growing of pecans is one business, and marketing them is altogether another business. In order to sell our pecans we have to study the markets, learn what the trade wants, in what grade they want them, number of grades, and in what packages they are wanted.

We can often sell our pecans to a private fancy trade by advertising, sending out prices with samples, and dispose of our crops very satisfactorily to this direct trade; but when quantities of the standard varieties are gathered, and are ready to be shipped in car loads, we have to rely upon the regular channels of trade that handle such products in car load lots.

We are quite fortunate in having many produce exchanges to discover the best ways of offering such crops. We also have the benefit of the apple and peach exchanges, which have to handle a perishable crop, in a limited time, to a limited territory. We are also fortunate in having the benefit of the California Fruit Exchange of many years' successful operation, in handling a valuable crop, all disadvantages being considered.

The different pecan organizations recognize this subject as one of the most important problems for consideration, and they have committees composed of the most efficient members to make a study of this marketing, and we do not anticipate any serious trouble or losses, in disposing of the nuts grown in the South. We realize that the fancy prices of from 50c to $1.00 a pound are excessive, when the nuts in quantities have to be handled through the regular channels of trade, like other products.

It is well to work up a private trade, eliminating the middle men as much as possible, but at the same time co-operating with those men who are laboring to establish a pecan exchange for the disposition of all the nuts, so that proper returns will be realized.

If the Georgia peach growers, with 12,000,000 of trees, can find a satisfactory market for 4,000 car loads of peaches in the short space of eight weeks, selling a perishable product which cannot be shipped too great a distance, it looks possible that the pecan growers can sell the nuts from the half million trees, when they have twelve months' time, and for a product that is not perishable and can be shipped to any point on the globe. Acquaint the world with the merits of the Paper Shell Pecan, and the problem of marketing will be solved.

Best Pecan Crackers

When you have formed the habit of eating pecans which, by the way, is a very pleasant one, the next best addition is a nut cracker.

The Perfection Cracker, made at Wayco, Texas, will prove to be a very satisfactory implement. The Squirrel Cracker is a more rapid machine, but does not crack the nuts quite so nicely. The New Hand Cracker, made by Mr. F. B. Mays of Whorton, Texas, is a more rapid machine than the two just mentioned, and any one wanting to crack a quantity for home market will find it an excellent implement. All the above machines can be had for $1.00 each.

Should you be interested in cracking nuts in a wholesale way, where you wish to furnish them by the ton, write to Mr. Robt. Woodson of St. Louis, Mo., and get his prices on a power machine, which will crack from 500 to 600 pounds per day. Another power-cracking machine can be had of the Louisiana Nut & Machine Co., New Orleans, La.

Dry pecans are more easily cracked if soaked in water over night.

Pecan Analysis and Food Value

We enclose here from the Department of Agriculture at Washington, D. C., analysis of pecans and all other nuts, and a comparison of these nuts to other food products. At a glance, one can see the value of pecans as compared to the other nuts.

Food Value of Nuts Compared

	Per cent. Protein	Per cent. Fat	Fuel value per cent. Calories
Almond	21.4	54.4	2,895
Beechnut	21.8	49.9	2,740
Brazilnut	17.4	65.0	3,120
Butternut	27.9	61.2	3,370
Chestnut, fresh	6.4	6.0	1,140
Chestnut, dry	10.7	7.8	1,840
Cocoanut	6.6	56.2	2,805
Filbert	16.5	64.0	3,100
Hickorynut	15.4	67.4	3,345
Peanut	29.8	43.5	2,610
PECAN	12.1	70.7	3,300
Pine Nut	33.9	48.2	2,710
Pistachio	22.6	54.5	3,250
Walnut	18.2	60.7	3,075
Round steak	19.8	13.6	950
Cheddar cheese	27.7	36.8	2,145
Eggs, boiled	12.4	10.7	680
Wheat flour	11.4	1.0	1,650
White bread	9.2	1.3	1,215
Beans, dried	22.5	1.8	1,605
Potatoes	2.2	.1	385
Apples	.4	.5	290
Raisins	2.6	3.3	1,605

As we have mentioned before, if pecans were put into the lunches of the school children, they would not only very easily consume the nuts of the United States, but from this table you can see that they would be supplied with the very finest of products. Nut lunches on the trains are the most satisfactory lunches that can be prepared.

It is reported by good authorities that the United States produced more pecans in the year 1912 than it produced in the whole twentieth century. In 1884 there was only one car load of pecans shelled, in 1912 there were 298 car loads of pecans shelled. This shows considerable increase, but is small as compared to what it will be in the next ten years. Greater uses for nuts are found every day, and the quantities used by confectioners and grocery stores are rapidly increasing their immense proportions.

The industry of the peanuts increased from a few pounds to over a thousand car loads a year.

Although at present the use of the pecan is almost unlimited, it is small when compared to what it will be when the public becomes informed of its quality.

The eating of excessive amount of pecans, or after heavy meals or late at night, is not recommended, but eaten with other foods, as all heavily concentrated foods should be eaten, will prove beneficial to almost any one. The pecan especially appeals to those using the raw food diet, as well as to those who want a sanitary article and 100% good meat in concentrated form.

The National Convention instructed Mrs. Thomas A. Banning of Robertsdale, Ala., to prepare a booklet—"How to Use Nuts." Write her for it.

A conservative estimate fixes ten acres of grass land necessary to supply an average family with beef for one year. The same conservative estimate fixes one-tenth that amount of land necessary to supply an average family with the choicest and most wholesome food of pecans.

The Future Marketing of Pecans

The old adage, "Necessity knows no law," we think will prove applicable to the subject of marketing pecans. A few years ago no one dreamed that it would take a few million dollars to supply the peanut trade of to-day, and the demand is still growing; while the quantities of corn flakes and such cereals that are now being used would stagger the average person.

The tendency towards convenience in all food products compels us to believe that a large per cent. of the pecan crop ten years hence will be offered already shelled. This presents the unit of food to the consumer without the necessity of a cracker, and eliminates the inconvenience of the shells and annoyance of scattered fragments.

When the Paper Shell Pecan is sufficiently well known, and is offered to the public in shelled cartons or packages, the traveling public on parlor cars and day coaches can alone use more pecans than are at present grown. Any product having the immense value of the pecan will have plenty of competition in the commercial world that handles it. No one pecan exchange will monopolize the business, but each district will have one, and possibly several, exchanges in each district. Co-operation will be one of the essentials for successful handling of pecans, and the other will be the proper grading and classifying.

Don't Plant Pecan Seedlings

There is not one valuable pecan seedling in the United States that would come true from the seed. Do not plant seedlings, because their bearing qualities are so uncertain. Some will be prolific, some barren and many shy. Don't plant pecan seedlings, because one hundred of them will yield a job lot of one hundred sorts.

Seedlings, on account of size, are more difficult to gather, less remunerative, and are hard to classify.

Varieties

We propagate the standard varieties of pecans, and constantly study the adaptability of each variety to the diffierent sections where pecans are planted. Some varieties, after being tested a few years, fail to have the necessary requirements to warrant the continuation of their planting. Other varieties are discovered which have some superior merits, and they are all thoroughly tested, and if they prove to have the essential good points they are then propagated.

A variety must have three essential qualities: the first is tonnage, the second is appearance, and the third is quality. It would not be a bad plan to add to these three main essential qualities, the quality of healthfulness of the tree. We put tonnage or yield first, for it makes no difference how superior a nut is in all other points, if it is not a good yielder it does not become popular. Under the heading of appearance, it is first essential that the nut present well before it is cracked, and it must also present

well after it is cracked. The quality of the nut is the third essential point, and it is the one that is the proof of the good qualities of a variety, and one that is essential in order that the demand may be made constant.

Some of the best tested and safest varieties for Texas are Stuart, Delmas, Money Maker and Success. From Austin west, Halbert, Texas Prolific and Oliver are rcommended.

Stuart

Size large to very large, ovate cylindrical; color grayish-brown, splashed and dotted with purplish-black; base rounded, tipped; apex blunt, abrupt, somewhat four-angled; shell medium in thickness; partitions thin; cracking quality not very good; kernel plump, full, bright straw-colored; sutures moderately broad and deep, secondary sutures not well defined; texture solid, fine grained; flavor rich, sweet; quality very good. While very plump it is not so easily removed from shell whole as some other varieties.

The whole country over still votes the Stuart a popular pecan. We have given a full description of it, and in addition, would say, the objection to it is that it is a little hard to shell, but if allowed to ripen for two months it shells very much more readily, and then the plump kernels are exceedingly attractive. The cracking machines will handle them very satisfactorily when we get a surplus of this fine nut. Another objection to the Stuart is that the rosette likes this variety especially. In some sections the shuck worm materially affects the appearance of the Stuart for market.

Frotscher

Large, cylindrical ovate; color bright yellowish brown, with a few black splashes about the apex; base broad, rounded; apex blunt-pointed, four-angled; shell slightly ridged, smooth, thin; partitions thin; cracking quality excellent; kernel brownish-yellow, dark veined, frequently slack at one end; sutures of medium depth, rather narrow; secondary sutures well marked; texture dry, flavor good, quality fair to medium.

The Frotscher is a very popular nut in this whole section. Its finest point is the appearance it makes upon the market. They are easily cracked without any artificial assistance, and where the trees are given **intensive culture** they give best satisfaction. It is not a variety that will stand neglect like some other varieties, and this one point has caused some to dislike it. This last summer has been a very severe test upon the Frotscher, inasmuch as it has been the driest year in the last forty, and the Frotschers have universally shedded their nuts; possibly such dry weather will not occur again soon. We do not think less of the Frotscher for having shed such a large per cent of its nuts this year, knowing that all varieties have their weak points.

We consider the Frotscher still one of the safe, standard nuts. Our observation has been that when this variety is grown on stiff, red clay land, that the kernels are brighter and freer from the peppering appearance, than when grown on looser soil.

Schley

Size large; oblong, oval flattened; color light reddish-brown, marked with small specks about the base and small splashes of purplish-brown about the apex; base rounded, abruptly short nippled; apex abrupt, flattened on two sides.

The Schley pecan, if a prolific bearer, would occupy half of all the orchards planted, on account of its being of very thin shell, fine texture and good quality. In sections where it has been tested and proved to be a reasonably fair bearer we think it will result in being the most profitable variety to plant. Up to the present, the most universal report of the Schley has been that it was too shy a bearer, but now the trees are getting older, and many sections are reporting that the Schley is bearing sufficiently good crops now. The most discouraging report we have heard of the Schley in the last year is, that one party reported that with him the rosette was so bad that he was top working them to Stuarts. The kernel is not only plump and universally well filled, but it has a very uniform bright color of the meat. Another objection to the Schley is that it is not so large as some of the other varieties and crops run irregular in size.

Delmas

Size large to very large, averaging 40 to 50 nuts to the pound; form oblong, ovate; shell moderately thin; kernel plump; quality good to very good; flavor excellent; tree one of the most vigorous of all; very productive. The nuts are not as bright as some of the other varieties, but are exceedingly uniform in size. The tree is upright in growth, and is one of the thriftiest varieties propagated.

The objections are that in some very moist sections some years it scabs considerably on the lower limbs. The other objection is that the nuts are not as bright in appearance, and will not show up so well in the market. Even in sections where it scabs badly the drier years, it yields a most satisfactory crop through the middle of the cotton states, and especially in Texas it is one of the finest varieties that can be planted for commercial orchards.

Pabst

This variety continues to stand the test over a large territory, and is one of the standard varieties for commercial orchards, being thrifty and especially hardy. It does not shed exceedingly dry years, and it does not overbear and have off years like some varieties.

The objections to the Pabst are that it is not quite large enough to be classed with the very large nuts, and it is not quite as smooth as it should be to be a fancy nut. The quality of it, however, makes the person who eats it want some more Pabst.

Money Maker

The good points of the Money Maker are that it is more free from all diseases than any variety which we grow. The next finest point it has is its prolificness. It is also very easy to crack out in unbroken halves, and when cracked it is uniformly a bright yellow, plump and attractive nut.

The two objections to the Money Maker are that the shell is a little too thick to be classed as a fancy nut, and it is a little under size, and will have to be classed as a medium nut. It grows in favor annually.

Mobile

Size medium to large; shell moderately thin; quality fair; kernel uniformly bright and attractive. It is very productive, and even in the driest years the Mobile is breaking its limbs with fruit.

BUDDED PECAN TREE—Eighth Year Set; 39 Inches in Circumference.

The objection to the Mobile is that quite often the nuts fail to fill sufficiently well. This being the case, they should not be offered until after having been well fanned to blow out the faulty ones, or run through a centrifugal machine to select the plump nuts from the faulty ones.

On account of the very prolific bearing habits of the Mobile, it probably would be a good plan to plant a portion of a grove of this variety, with the expectation of having the nuts shelled and selling the meats. In this way the exceeding prolificness of the tree will make it profitable.

In the districts where they have a close, compact, clay soil, the nuts fill better than in districts of loose, sandy soils. The year 1915 was a distinctively off year with Mobile.

Success

Size large to very large; shell moderately thin, but very tough; kernel usually plump and rich; flavor very good.

It is not sufficiently well tested in all of the pecan districts. Some of the young trees which have been bearing in different districts, have not yielded nuts well filled, but as they grow older we feel confident that this objection will be eliminated. Test with a few trees before planting heavily.

Van Deman

This variety at Charleston, S. C., heads the list as the most desirable pecan planted. In many sections it is a very desirable variety, being a very rapid growing tree, and the nuts exceedingly attractive in appearance. It is a hardy variety, and withstands the cold better than most of the standard varieties.

The objections to the Van Deman are that in some humid sections it often scabs badly, and the crop does not run uniform in size. Susceptible to rosette.

Teche

Size medium to small; shell of average thickness; kernel fairly plump; quality medium to poor; easily cracked. It is one of the most productive of all pecans, bearing a good crop every year, and is, like the Money Maker, comparatively free from all diseases. This dry year has proved it to be similar to the Frotscher; it has shedded a large proportion of its crop, but not so much as the Frotscher. It is one of the latest varieties to ripen, and should not be planted further north than Macon, Ga. Would say go slow on Teche.

Will There Be Over Production?

So many good, thinking business men have asked the question, "When will we have over production in standard pecans?" that we have decided to give this subject some consideration. The question is also applicable, "When will we have over production of wheat; over production of corn; over production of beef?" These three products are all staple products, and are not perishable.

Pecan culture, while it is the most promising new industry of the South at present, when it becomes adjusted in the regular avenues of trade, will be as standard a product as the three mentioned. With the map of the world before us, when we consider what a small per cent of the South is well adapted to the growing of standard pecans, and when we consider that the present crop of pecans of the whole United States would supply the school children a nut lunch for only one week, if it were distributed to all the school children in the United States, it begins to look as though it will be several years before we will have a supply, much less an over production. Then let us take into consideration that the taxed, burdened Orient, and Europe with staggering war tax, will not soon grow pecans for export. For these reasons we are inclined to think that over production is not soon to be.

As an actual fact, in the next forty years, the population of the United States alone will be 200,000,000 or more, and the demand for such standard goods will grow faster than the nuts will be produced.

Over production, if we have it at all, will be the result of congestion, and we will never have it if we inaugurate a system of co-operative distribution.

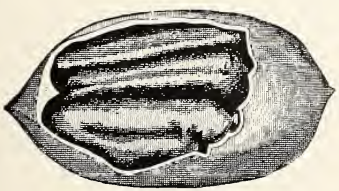
Consider the immense amount of importations of nuts into the United States compiled by Department of Statistics. The total importation of nuts for the following years were:

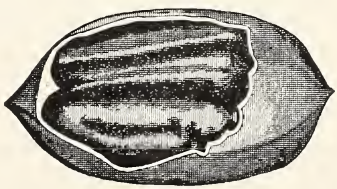
1899	$3,103,977	1905	$6,154,515
1900	3,489,699	1906	7,228,607
1901	3,756,137	1907	9,315,891
1902	4,214,676	1908	',563,742
1903	5,038,726	1909	8,549,997
1904	5,473,306		

The table below gives in detail the different kinds of nuts and shows a rapid increase of importations:

KIND	1910 pounds	1911 pounds	1912 pounds	1913 pounds	1914 pounds
Almonds—not shelled	6,810,056	3,762,654	5,242,562	2,363,860	5,730,774
Clear shelled	10,495,750	12,260,636	11,692,988	12,655,056	13,3 7,631
Apricots and Peach Kernels	27,854	13,551	7,939	18,769	
Cocoanuts in the shell	$1,298,970	$1,704,261	$2,012,203	$1,793,713	$2,133,416
Cocoanut Meat broken or Copra					
Not shredded, dessicated or prepared	20,830,538	38,081,984	64,505,787	34,283,592	45,437,155
Dessicated, shredded, cut or similarly prepared	5,985,308	6,661,850	5,396,465	6,826,095	10,297,554
Cream and Brazil	461,496	277,679	21,601,008	11,933,139	20,423,497
Filberts—not shelled	10,026,961	10,084,987	8,375,860	8,586,278	10,992,992
Shelled	1,413,391	2,332,606	1,368,835	1,450,620	1,643,507
Marrons, crude	10,270,398	9,968,879	14,845,345	10,157,321	
Olive nuts, ground	$478	$236	$206	$342	
Palm and Palm Nut Kernels	$6,907	$5,744	$7,970	$4,872	
Peanuts or Ground Beans					
Unshelled	11,297,172	11,055,823	12,660,433	12,660,612	
Shelled	16,089,919	7,821,405	3,127,829	7,823,173	27,077,158
Pecans	3,349,460	2,333,037	2,607,227	1,803,434	
Walnuts—not shelled	23,269,974	21,146,116	22,208,845	16,363,046	28,267,699
Shelled	10,960,988	11,244,054	10,173,286	10,093,622	8,928,029
All other shelled or unshelled, not specifically provided for	3,584,544	2,962,663	3,050,999	3,600,056	
Total Value Import	$12,775,196	$14,265,572	$15,626,484	$13,508,307	$19,727,924

Under this head of over production, it is gratifying to note that while the United States grows at present a large quantity of nuts, still we only grow at home one-fourth of what we use, and import three-fourths. We import three pounds of nuts to every one pound grown at home.





Possibilities of a Pecan Grove

This whole booklet has been written just as experience developed it in the field. Not what might be done, but what has actually been done. As to the possibilities of a pecan grove, we would prefer to present a few additional facts and let the reader draw his own conclusions.

Please read again what we say on "*Age of Bearing and Yield.*" Write the owners and see if they will take $1,000 per acre for those groves.

Mr. Paul P. McKeown of Concord, Fla., in the summer of 1913, sold a ten-year old grove of seventy acres for $25,000, and reserved thirty acres for which he would not accept an equal amount.

Mr. C. M. Barnwell of Baconton, Ga., sold six hundred acres for $200,000, and only half the grove was old enough to bear.

Col. C. A. Van Duzee, president of the National Nut Growers' Association, in his annual address, said: "My own best trees are eight years of age, having returned more money than the cost of the land, trees, care, fertilizers and interest upon the investment. I value them at ten times the total cost, but I have many other trees that are not so good.

"Two weeks ago I helped to gather the crop from a twenty-two year old pecan tree, which will pay its owner eight per cent interest upon a valuation of $2,000 this year. On that basis it has increased in value over $7.00 each month for the twenty-two years, and it is not through growing yet.

"The above are examples of the best trees, but there is not a farmer in the entire nut area that may not do as well or better, if he will."

We undertook to develop a grove so the bodies of the trees would measure 12 inches in diameter at end of eight years after setting, and to accomplish this without one shovelful of stable manure. At the end of the seventh year the best tree in the grove (a Money Maker) measured 11 inches in diameter, and had yielded over 30 pounds of nuts; at the end of the eighth year the largest tree measured 39 inches in circumference. We do know that we can develop a grove 12 inches in diameter in eight years, can gather a few nuts the fourth and fifth years, but we do not know what the possibilities of a grove would be when given intelligent and intensive attention from before it is planted to maturity. A pecan grove will respond beautifully to this kind of attention, and only to this kind. Hybridized and pedigreed varieties of the future nuts might hold wonderful improvements in store for us.

We leave you to accept the opportunity offered by improved pecans, the truest elixir of life found by this scribe.

Pecan Developing Companies

The question, "Is it safe to buy pecan groves managed by regular pecan developing companies?" is often asked. To this we would say, Yes and No. Yes, if you buy from the proper company after a thorough investigation as to its ability to carry out all the contracts which it agrees to. It is just simply a business proposition, and when the companies comply with business principles, one is safe in engaging with them.

The first essential is to know that the land titles are clear. Then investigate for adaptable soil. Acquaint yourself with the personnel of the company, especially the **local manager**, and ascertain by any and all available means if he has the practical knowledge and ability to develop the grove. These requirements, after all have been met, we consider are worthy of your co-operation. If the company omits any of these essential points, it is well to withhold your co-operation.

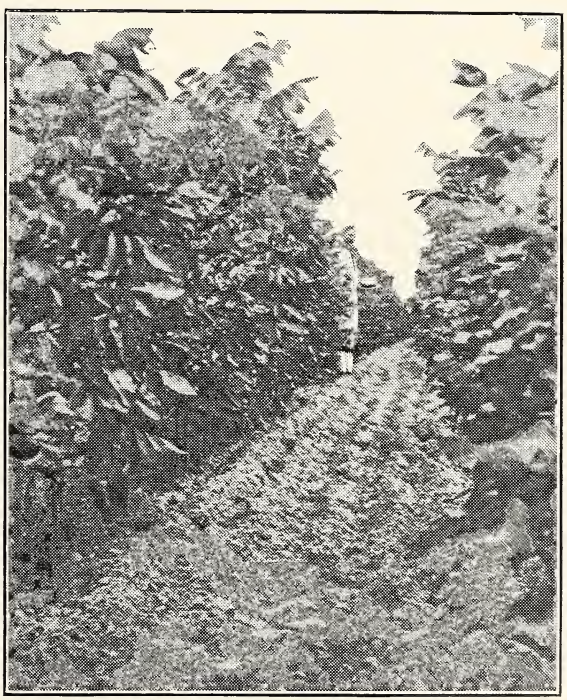
A Texan can cross the line and swat a Mexican, and thank you for the privilege; but for Uncle Sam, with his mighty army, to guard the border the cost is several thousand dollars per month. This is an explanation as to why large pecan developing companies seem to be extravagant in their expenditures. Some pecan corporations are successful and some are unsuccessful. Just as corporations engaged in every other line of business in the United States—some are successful and some are failures. Proper motives and proper management are the features that determine which it shall be.

Pecan Trees on Streets

Some people and some cities advocate the planting of pecan trees on the streets, arguing that they will get both utility and beauty from the tree. This sounds practical, but in reality we consider pecan trees on the streets objectionable for the reason that when the trees begin to bear the passing public claim the crops. What they cannot conveniently gather, they will destroy in some way. They throw stones and climb fences till it is often a nuisance to the parties who are living close to the streets. We happen to know that in Savannah, for the above mentioned reason, the council ordered cut down some pecan trees two feet in diameter.

Care of Trees on Arrival

After long experience we find we cannot neglect the trees at any time. We have been, on the average, forty months caring for these trees, and would insist that the purchaser neglect them not one minute for anything. If received in freezing weather, place in a cellar, or cover entirely the whole package in wet grass, straw or such material, and wait for a warmer day.



Pecan Nursery.

If not ready to plant at once, trench the trees in moist soil thinly, leaning them towards the south. If the roots are dry, or if the branches are at all shriveled, dig a trench, untie the trees and place them in it, working in fine soil among the roots and above them for several inches, saturate with water and cover with more soil. They will become plump in a very few days, and should be planted just as soon as possible. Do not expose the tree roots to either sun or wind. Keep them damp in a barrel or wet sack.

Absolutely No Agents

Why pay an agent as much for his services as the trees cost? Be your own agent and send direct to the nursery, as he does, and save his profits.

BUSINESS MAN, do you need trees—A No. 1 trees, carefully grown? Order direct from headquarters and pocket the fruit-tree agent's profit. Read the letters from our customers. They are men of experience with our trees and dealings and know where to get full value for money sent. Have you bought trees of agents. Did you pay high prices and then get deceived? Could you find agent afterwards to get him to make trees good? Now we earnestly ask you to give us a trial. We sell at about one-half the agent's prices. **We support no middle man.** We guarantee our trees to be true to name, and you can find us, for we have a regular place of business, and have a reputation to maintain. Can you find any locality that has not been misrepresented by agents? Where our trees are the best known is where they are most appreciated.

Announcement

"The Pecan Business" is written for those who are interested in pecan growing and for those who desire to become interested in a safe and profitable business.

The industry is interesting, healthful, profitable and unlimited. It has drawbacks, but they are necessary to ward off the tenderfoot.

We invite you to come to see our groves and nurseries, and kindly invite your attention to our way of doing business without agents.

Write Us

When you receive your trees we want you to write us. When the trees grow we want you to write us. When the trees bear we want you to write us. If any disease or insect appears, we want you to write us so we can aid you. We take all the leading agricultural and horticultural papers and keep abreast with progressive horticulture. We study horticulture, we delight in horticultural works and love to correspond with our customers on horticulture. We want our customers to write us of every new fruit and pecan or other nut trees they know of.

Natural Advantages

The natural advantages of our soil being a happy combination of sand and clay, together with our climate and location, give us facilities for supplying trees of the finest quality and for the lowest price. Hence the secret by which we give our customers entire satisfaction.

THOMASVILLE

THOMASVILLE, a beautiful, historical, and attractive little modern city of 7,000 inhabitants, lies in the southwestern part of the state, on "The Dixie Highway" fourteen miles from the border line of Florida. Is in the center of the new industry—the Paper Shell Pecan industry of the South—shown by map contained in Bulletin No. 251, issued by the United States Department of Agriculture.

There are more paper shell pecan trees planted within seventy-five miles of Thomasville than in any other one territory of the United States.

Among the chief attractions of Thomasville are the handsome estates owned by Col. O. H. Payne, J. H. Wade, M. H. Hanna, John F. Archibold and others. They have spared neither means nor talent in establishing these elegant homes. You would be well repaid for traveling several hundred miles to see them.

Thomasville is well equipped with five banks, five hotels, a public library, a modern hospital, six wholesale grocery stores, has its own electric light plant and water works, seven factories, seven evangelical churches, and a scant number of physicians—being noted all over the United States as a health resort. It is laid out with wide streets which are kept in excellent condition.

It is a city of Roses.
It is a city of Wistaria.
It is a city of Oaks.

The town is surrounded by one of the best agricultural sections in the state. One of its main attractions is a system of seven hundred miles of graded roads through a splendid farming territory, furnishing unsurpassed scenery of trees and beautiful landscapes. Has recently built a $40,000 depot, a $60,000 school building, and a $50,000 government post-office building. The greatest attraction to Thomasville is the hospitable people who make up its citizenry. Once you know them you always love them.

50,000 THRIFTY BUDDED PECAN TREES READY TO DIG.

Gathering the Nuts, and Making One Shipment of One Ton is the True Elixir of Life